Alteration of Terrain Proposed Rules

Presentation to the Great Bay Siltation Commission

December 10, 2007

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The Purpose of Alteration of Terrain

To protect surface waters,
drinking water supplies, and groundwater
from construction activities
and development

Permit Jurisdiction

Terrain Alteration RSA 485-A:17

Permit needed → 100,000 sf (2.3 ac) disturbance
or 50,000 sf in protected shoreland

Why is an Alteration of Terrain Permit Required?

Temporary erosion & sediment control

Permanent treatment (sediment , nitrogen, phosphorous, metals, etc.)

Flooding
Stream bank erosion

Outline of Changes proposed

- General Permit by Rule created
- New application requirements
- Stormwater controls updated
- Stormwater treatment systems updated
- Groundwater recharge requirements added
- Areas that need further protection identified
- Antidegradation laws quantified
- 100-year floodplain criteria added

General Permit by Rule

- Municipal linear projects
- Agricultural projects
- Projects < 100,000 sf (50,000 sf in Shoreland)

New Application Requirements

- Identification of the resources to be affected:
  - Receiving waters
  - 100-year floodplain location
  - Designated rivers
  - State & federally listed threatened and endangered species
  - Natural heritage bureau check
  - Impaired surface waters
- Compliance with Agr 3800
  - Prevention/control of invasive plant, insect, & fungal species
- Photographs of the site
- Shoreland worksheets

Stormwater Controls

- Detailed soil mapping required to better analyze the soils on site
- Tighter controls for channel protection
- Adding the 50-yr storm to the peak runoff controls to better handle flood events

Stormwater Controls

- Sizing for Water Quality Volume (WQV) rather than 2 and 10-year storms
- WQV is smaller than a 2-year storm volume but captures 90% of the storms.

Stormwater Treatment Systems

- Stormwater ponds
- Stormwater wetlands
- Infiltration practices
- Filtering practices
- Flow through swales
- Vegetated buffers

- LID methods: porous pavement, bio-retention ponds, dry wells, etc.

Groundwater Recharge

- Groundwater recharge required
  - Mimic natural hydrology
  - Not for high load sites

Area of Further Protection

Providing restrictions on stormwater discharges:

- In Water Supply Intake Protection Areas
  - Within 250 feet of the surface water source
  - ¼ mile radius of the intake
- In Groundwater Protection Areas
  - Areas that have high transmissivity
- In Water Supply Well setback areas

Antidegradation quantified

- Within 1 mile of an impaired water & TMDL not done → Applicant provides pollutant load calculations (PLC) showing no increase
- Within 1 mile of an impaired water & TMDL done → Applicant provides PLC showing in compliance with TMDL & no increase for those pollutants not addressed in TMDL
- Within 1 mile of an Outstanding Resource Water (ORW) → PLC showing no increase
- All other projects → show < 10% effective impervious cover (EIC) & > 65% undisturbed cover (UDC) OR applicant provides PLC showing no increase
- Redevelopment projects → no increase in EIC/no decrease in UDC

100-year floodplain criteria

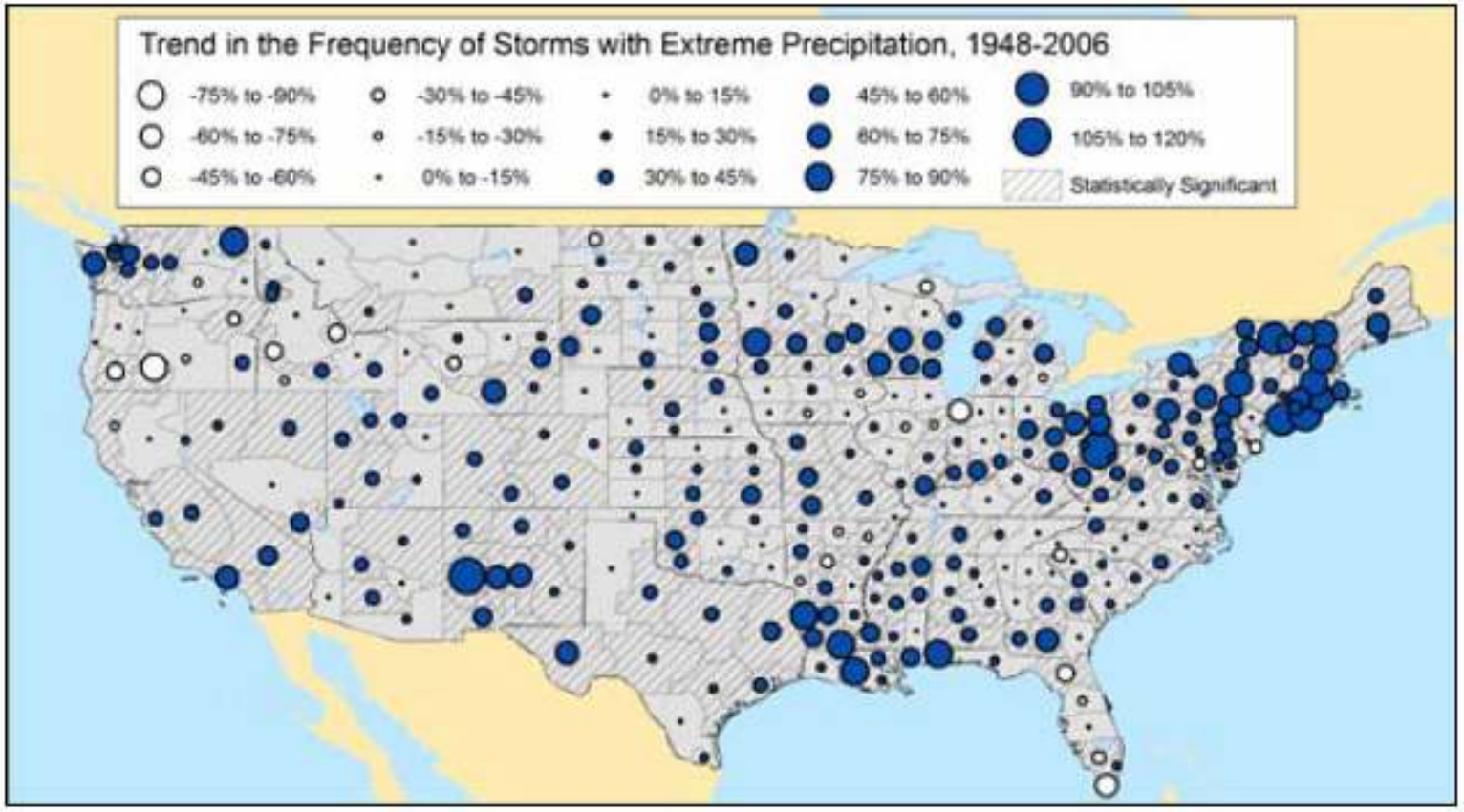
- Looking at cuts and fills (compensatory storage)
- Requiring a river analysis thru computer modeling for fills>0.5 acre-ft. or bridge/culvert crossings
- Comprehensive Flood Management Plan Commission
  - Examine flood frequency issue?
  - Apply jurisdiction to 50K projects?
    - Would affect ~6200 miles of streams

New Design Manual

- Contract with Comprehensive Environmental, Inc.
- 3 Volumes
  - Design Guidance
  - Erosion & Sediment Control Manual
  - Pollutant Load Reduction Manual
- Publication in June 2008

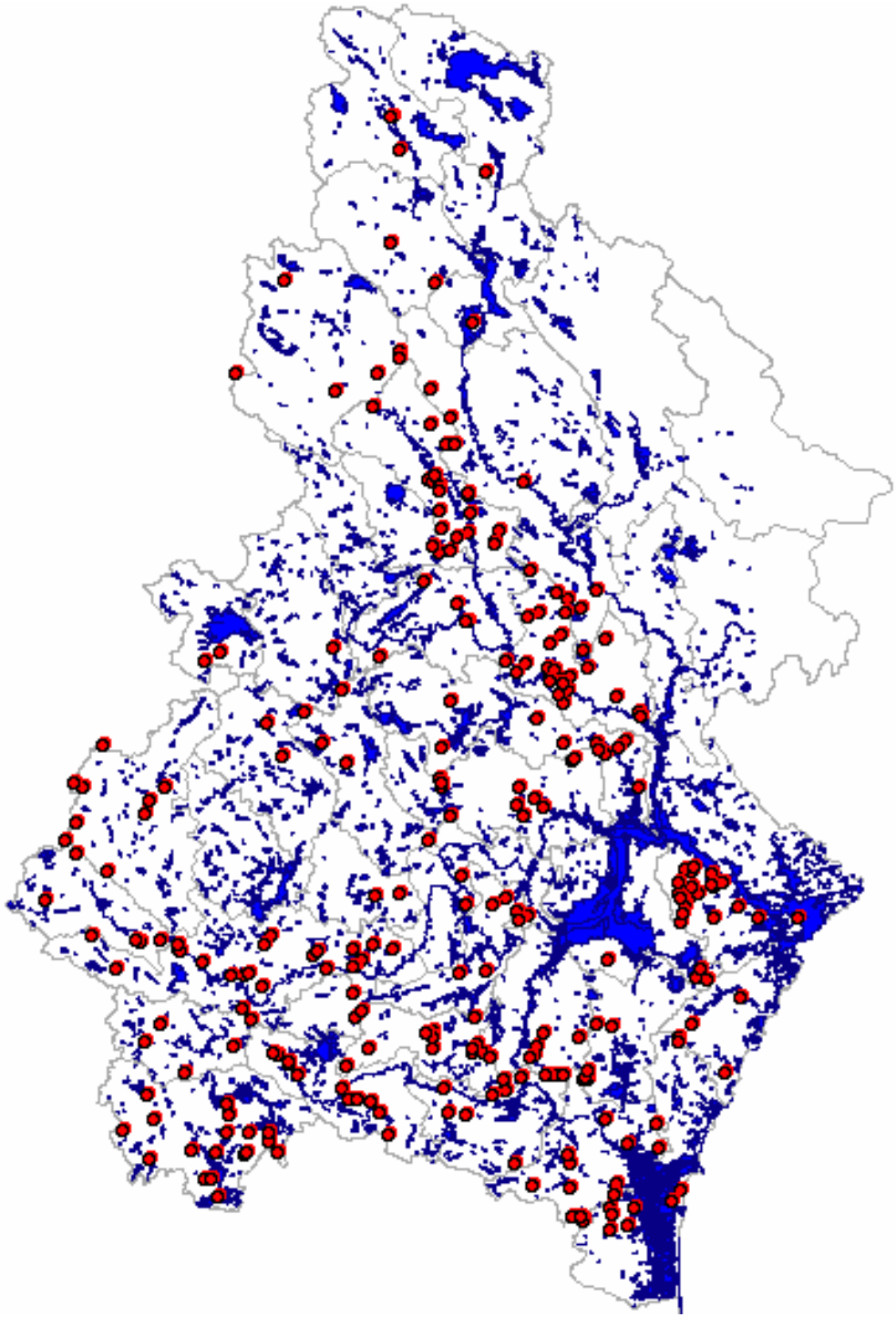
Source: Environment New Hampshire. "When It Rains, It Pours" December 2007 Report

Figure ES-2: Trend in Frequency of Extreme Precipitation by Climate Division



NH: Percent increase in frequency of extreme precipitation = 83%

Permits issued 2004 – 2007: 283



Construction Compliance Issues

- 3 inspectors for New Hampshire
  - 1 inspector in coastal watershed
- Studies from EPA
  - 7 – 100 tons of sediment lost per acre
  - Compliance with EPA requirements reduce losses 70%
- N.C. field survey for silt fence (>1000 sites)
  - >30% never installed
  - >40 % poorly installed
  - >67% required maintenance

Questions???